

IN THE CLAIMS

Claims 1 – 71 (Cancelled)

72. (New) A method for monitoring intra-thoracic fluid content using an implanted cardiac stimulation device comprising at least two implanted electrodes, the method comprising:

responsive to occurrence of a cardiac event, delivering an impedance measurement pulse at a predetermined interval therefrom;

measuring impedance between the two electrodes using the delivered impedance measurement pulse;

performing the first three steps repeatedly over a period extending over multiple days to acquire a set of impedance data;

employing the set of impedance data to determine whether intra-thoracic fluid content is increasing or decreasing.

73. (New) The method of claim 72 wherein the stimulation device comprises a sense amplifier having a blanking period and wherein delivery of the impedance measurement pulse is performed during the blanking period.

74. (New) The method of claim 72 wherein delivery of the impedance measurement pulse is performed by delivery of a monophasic pulse.

75. (New) The method of claim 74 wherein the stimulation device comprises a sense amplifier having a blanking period and wherein delivery of the impedance measurement pulse is performed during the blanking period.

76. (New) The method of claim 74, wherein delivery of the impedance measurement pulse is performed within 10 – 30 ms of the cardiac event.

77. (New) The method of claim 72, wherein delivery of the impedance measurement pulse is performed 10 – 30 ms of the cardiac event.

78. (New) The method of claim 72, further comprising providing an indication that intra-thoracic fluid content is increasing or decreasing.

79. (New) The method of claim 72, further comprising filtering the set of impedance data to remove impedance changes due to respiration.

80. (New) The method of claim 72, wherein the device comprises leads carrying the electrodes and wherein the method further comprises employing the measured impedances to assess the integrity of the leads.

81. (New) The method of claim 80, further comprising declaring the set of impedance data flawed responsive to the assessment of the integrity of the leads.

82. (New) The method of claim 81, wherein assessment of the integrity of the leads comprises comparing a measured impedance to a prior measured impedance to determine whether the measured impedance differs from the prior measured impedance by more than a defined amount.

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82. (New) The method of claim 81, further comprising declaring the set of impedance data valid responsive to the measured impedance differing from the prior measured impedance by less than the defined amount.

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83. (New) The method of claim 72, wherein declaring the set of impedance data flawed is performed responsive to a said measured impedance differing from a prior said measured impedance by more than a defined amount.

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84. (New) The method of claim 83, further comprising declaring the set of impedance data valid responsive to the said measured impedance differing from the said prior measured impedance by less than the defined amount.

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86. (New) The method of claim 72, wherein the device comprises at least a third electrode and wherein the method further comprises performing a cross check of the measured impedance values by measuring an impedance using the third electrode.

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86. (New) The method of claim 85, wherein the method further comprises declaring the set of impedance data flawed is performed responsive to the impedance measured using the third electrode.

Part 1/26
87. (New) A implantable device capable of measuring intra-thoracic fluid content, comprising:

at least two implantable electrodes; means for determining occurrences of cardiac events; an impedance measurement means for measuring impedance between the electrodes repeatedly over a period extending over multiple days to acquire a set of impedance data, the impedance measurement means comprising:
means responsive to occurrence of a cardiac event, for delivering an impedance measurement pulse separated by a predetermined interval therefrom;
means for measuring impedance between the two electrodes using the delivered impedance measurement pulse; and
means responsive to the set of impedance data for determining whether intra-thoracic fluid content is increasing or decreasing.

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86. (New) The device of claim 87 wherein the stimulation device comprises a sense amplifier having a blanking period and wherein the means for delivering the impedance measurement pulse comprises means for delivering the impedance measurement pulse during the blanking period.

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~~89.~~ (New) The device of claim ~~87~~ wherein the means for delivering the impedance measurement pulse comprises means for delivery of a monophasic pulse.

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~~90.~~ (New) The device of claim ~~89~~ wherein the stimulation device comprises a sense amplifier having a blanking period and wherein the means for delivering the impedance measurement pulse comprises means for delivering the impedance measurement pulse during the blanking period.

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~~89.~~ (New) The device of claim ~~89~~, wherein the means for delivering the impedance measurement pulse comprises means for delivering the impedance measurement pulse 10 – 30 ms of the cardiac event.

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~~92.~~ (New) The device of claim ~~87~~, wherein the means for delivering the impedance measurement pulse comprises means for delivering the impedance measurement pulse 10 – 30 ms of the cardiac event.

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~~93.~~ (New) The device of claim ~~87~~, further comprising means for providing an indication that intra-thoracic fluid content is increasing or decreasing.

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~~94.~~ (New) The device of claim ~~87~~, further comprising means for filtering the set of impedance data to remove impedance changes due to respiration.

~~96~~ ⁸⁹
~~95.~~ (New) The device of claim ~~87~~, wherein the device comprises leads carrying the electrodes and wherein the device further comprises means for employing the measured impedances to assess the integrity of the leads.

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~~96.~~ (New) The device of claim ~~95~~, further comprising means for declaring the set of impedance data flawed responsive to the assessment of the integrity of the leads.

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97. (New) The device of claim 96, wherein the means for assessment of the integrity of the leads comprises means for comparing a measured impedance to a prior measured impedance to determine whether the measured impedance differs from the prior measured impedance by more than a defined amount.

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98. (New) The method of claim 87, further comprising means for declaring the set of impedance data valid responsive to a measured impedance differing from a prior measured impedance by less than a defined amount.

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99. (New) The device of claim 87, further comprising means for declaring the set of impedance data flawed responsive to a measured impedance differing from a prior measured impedance by more than a defined amount.

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100. (New) The device of claim 99, further comprising means for declaring the set of impedance data valid responsive to a measured impedance differing from a prior measured impedance by less than the defined amount.

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101. (New) The device of claim 87 further comprising:
a third electrode;
means for measuring an impedance employing the third electrode and
means for performing a cross check of the set of impedance data by measuring an impedance using the third electrode.

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102. (New) The device of claim 101, further comprising:
means for declaring the set of impedance data flawed responsive to the impedance measured using the third electrode.

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103. (New) The device of claim 87, wherein the means for determining occurrences of cardiac events comprises means for sensing ventricular events.

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104. (New) The device of claim 87, wherein the means for determining occurrences of cardiac events comprises delivering ventricular pacing pulses.

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105. (New) The method of claim 72, wherein delivering an impedance measurement pulse is performed responsive to a sensed ventricular event.

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106. (New) The device of claim 72, wherein delivering an impedance measurement pulse is performed responsive to a paced ventricular event.